



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,099	01/28/2004	Hiroyuki Hirai	1330-0138P	9728

2292 7590 11/16/2007
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

ZIMMERMAN, JOSHUA D

ART UNIT	PAPER NUMBER
----------	--------------

2854

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

11/16/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/765,099

Applicant(s)

HIRAI, HIROYUKI

Examiner

Joshua D. Zimmerman

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-5, 10-14 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-9, 15-18, 20 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 6, 8, 9, 15, 17, 18, 20 and 21 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Maruyama (US 2005/0069648).

Regarding claim 6, Maruyama teaches “a method for producing a printed circuit board (paragraph 132, lines 6-12) comprising the steps of drawing a conductive pattern on a substrate by an ink comprising a dispersion of fine particles of a metal oxide or hydroxide (paragraph 38, last sentence of paragraph 39); and reducing at least part of said fine particles of a metal oxide or hydroxide to a metal to form a conductive pattern (paragraph 40).”

Regarding claim 8, Maruyama further teaches “wherein energy irradiation is conducted in the process of forming said conductive pattern (paragraph 98, lines 1-3).”

Regarding claim 9, Maruyama further teaches “wherein the formation of said conductive pattern is conducted in an inert gas (paragraph 98, lines 12-14).”

Regarding claim 15, Maruyama teaches “a method for producing a printed circuit board (paragraph 132, lines 6-12) comprising the steps of drawing a pattern on a substrate (paragraph 132) by an ink having at least two liquid parts (paragraph 45, paragraph 51) comprising a dispersion of fine particles of a metal oxide or hydroxide (paragraph 38), and a reducing agent having a reducing activity to said fine particles of a metal oxide or hydroxide or its solution (paragraph 86); and reducing at least part of said fine particles of a metal oxide or hydroxide to a metal to form a conductive pattern (paragraph 40).”

Regarding claim 17, Maruyama further teaches “wherein energy irradiation is conducted in the process of forming said conductive pattern (paragraph 98, lines 1-3).”

Regarding claim 18, Maruyama further teaches “wherein the formation of said conductive pattern is conducted in an inert gas (paragraph 98, lines 12-14).”

Regarding claims 20 and 21, Maruyama further teaches “wherein said inert gas is at least one selected from the group consisting of nitrogen, helium, neon and argon (paragraph 98, lines 18-20).”

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama, as applied to claims 6 and 15 above.

Regarding claim 7 and 16, Maruyama teaches all that is claimed, but fails to specifically teach “wherein said pattern is drawn by said ink according to a pattern information stored in a computer.” However, Examiner takes Official Notice that at the time of the invention, it was known in the art to use information stored in a computer in order to quickly and effectively draw pattern information on a substrate. Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use pattern information stored in a computer in the method of Maruyama in order to quickly and effectively draw on the substrate.

Response to Arguments

3. Applicant's arguments filed 8/31/07 have been fully considered but they are not persuasive.

Since applicant did not dispute the assertion of Official Notice, the well-known in the art statement is taken to be admitted prior art.

Applicant only argues that Maruyama does not teach “drawing a conductive pattern on a substrate by an ink comprising a dispersion of fine particles of a metal oxide or hydroxide,” a limitation which is present only in claims 6-9 (and 20). Therefore, no arguments have been presented to rebut the rejection of claims 15-18, and it is assumed that applicant admits that the rejection in the previous office action (reiterated above) is valid and correct.

Applicant argues that Maruyama fails to teach “drawing a conductive pattern on a substrate by an ink comprising a dispersion of fine particles of a metal oxide or hydroxide.” However, Maruyama clearly teaches using a metal oxide dispersion to draw (via inkjet) conductive fine wires (that is, the ‘conductive pattern’ claimed by applicant) in paragraph 39, specifically the last line. This is further described in lines 6-10 of paragraph 132 wherein the pattern is formed by ‘direct imaging formation of wiring by an inkjet application method.’

Applicant’s interpretation of paragraph 132, while partially accurate, is irrelevant since the section cited by applicant is for a different embodiment than the embodiment cited in the rejection above. Specifically, applicant has only focused on the embodiment in lines 1-6 of paragraph 132 (formation of a thin film), while it is the embodiment in lines 6-12, (‘direct imaging formation of wiring by an inkjet application method’) that is anticipatory of the instant claims.

Therefore, it is maintained that Maruyama anticipates each and every element of claims 6 and 7-9.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Zimmerman whose telephone number is 571-272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2854

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua D Zimmerman
Examiner
Art Unit 2854

jdz


JUDY NGUYEN
SUPERVISORY PATENT EXAMINER